

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	718479	actuator solenoid electromagnet	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	ON	2005/08/18 08:10
L2	877108	puls\$3	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	ON	2005/08/18 08:06
L3	3209409	hold\$3 latch\$3	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	ON	2005/08/18 08:07
L4	425662	plunger armature	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	ON	2005/08/18 08:09
L5	170749	(hard or permanent) near3 magnet\$4	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	ON	2005/08/18 08:10
L6	503	2 same 3 same 4 same 5	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	ON	2005/08/18 08:10
L7	718479	actuator solenoid electromagnet	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	ON	2005/08/18 08:11
L8	340	6 and 7	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	ON	2005/08/18 08:32
L9	1055	335/177-179.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	ON	2005/08/18 08:32
L10	2433	335/177-179.ccls. 335/229.ccls. 335/289-291.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	ON	2005/08/18 08:34

L11	37	10 and 6	US-PGPUB; USPAT; USOCR; EPO; JPO; IBM_TDB	OR	ON	2005/08/18 08:35
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US 20050093664A1

(12) United States

(12) Patent Application Publication

(12) Pub. No.: US 2005/0093664 A1
(12) Pub. Date: May 5, 2005

(34) ELECTROMAGNETIC ACTUATOR HAVING A HIGH INITIAL FORCE AND IMPROVED LATCHING

(30) Provisional application No. 60/500,620, filed on Sep. 5, 2003.

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(32) U.S. Cl. 335/220

(37) ABSTRACT

(21) Appl. No: 10/924,643

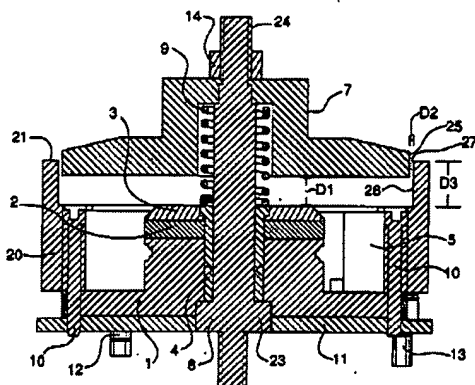
(22) Filed: Sep. 4, 2004

Related U.S. Application Data

(15) Continuation-in-part of application No. 10/041,001, filed on Dec. 28, 2001.

An electromagnetic actuator is provided that comprises a housing, a solenoid coil, and an armature. The armature is movably disposed in an interior cavity defined by the housing. Irregular gaps are formed between the armature and the housing to increase the initial force of the actuator and to improve the latching force of the actuator after the actuator has been actuated.

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DOCUMENT-IDENTIFIER: US 20050093664 A1

TITLE: Electromagnetic actuator having a high initial force and improved latching

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Abstract Paragraph - ABTX (1):

An electromagnetic actuator is provided that comprises a housing, a solenoid coil, and an armature. The armature is movably disposed in an interior cavity defined by the housing. Irregular gaps are formed between the armature and the housing to increase the initial force of the actuator and to improve the latching force of the actuator after the actuator has been actuated.

Current US Classification, US Primary

Class/Subclass - CCPR (1):

335/220

Summary of Invention Paragraph - BSTX (4):

[0003] An electromagnetic actuator is a device that converts electrical energy into mechanical movement. It consists primarily of two parts, a solenoid coil and an armature. Generally, the coil is formed from wire that has been wound into a cylindrical shape. The armature is typically mounted to move or slide axially with respect to the cylindrically shaped coil. An electrical signal applied to the coil generates an electromagnetic field that imparts a force on the armature, thereby causing the armature to move.

Summary of Invention Paragraph - BSTX (10):

[0008] In accordance with one aspect of the present invention, an electromagnetic actuator is provided and includes a housing, a solenoid coil and an armature. The housing has an end wall and defines a cavity. The end wall has non-coplanar first and second surfaces. The solenoid coil is disposed in the cavity of the housing. The armature is disposed substantially coaxially with the solenoid coil. The armature is movable between a first

Details Text Image HTML KWIC

	U	Document ID	Current OR	Current XRe	Pa	Title
2	<input type="checkbox"/>	US 200501883	335/220		8	High output magnetic inert
3	<input type="checkbox"/>	US 200501484	335/220		11	Method for determining the
4	<input type="checkbox"/>	US 200501404	335/220		20	Fuel injection valve having
5	<input type="checkbox"/>	US 200501344	335/220		14	Damping device
6	<input type="checkbox"/>	US 200501221	335/220		9	FAST ENGAGE, SLOW R
7	<input type="checkbox"/>	US 200501046	335/220		8	Electromagnetic actuator
8	<input type="checkbox"/>	US 200500936	335/220		8	Electromagnetic switch of
9	<input type="checkbox"/>	US 200500936	335/220		17	Electromagnetic actuator h
10	<input type="checkbox"/>	US 200500936	335/220		18	Solenoid actuator

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